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ABSTRACT

The large number of teachers not using computers in the classroom for administrative or instructional purposes was addressed by the implementation of a computer inservice workshop. The program described in this report was aimed at 18 teachers in a junior high school who reported that they did not feel comfortable using computers, or did not know how to use computers effectively. The teacher workshop consists of twelve 1-hour sessions that gave teachers hands-on practice and introduced them to computer hardware and software. The success of the inservice was measured by class assignments, a survey, and a post-test. At the end of the 12 week program, 84% of the inservice teachers reported feeling more comfortable using computers in the classroom. It was concluded that hands-on computer inservice workshops can help teachers become familiar with new technologies. Appendices include the questionnaires used for the teacher and inservice surveys, results of these surveys, a brainstorming activity, and a computer literacy test. (18 references) (Author/DB)

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HELPING TEACHERS EFFECTIVELY USE COMPUTERS IN THE EDUCATIONAL SETTING

by

Lori Ann Jones

A Practicum Report

submitted to the Faculty of the Center for the Advancement of Nova University in partial fulfillment of the requirements for the degree of Master of Science.

The abstract of this report may be placed in a National Database System for reference

September 1991

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Abstract

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The large number of teachers not using computers in the classroom for administrative or instructional purposes was addressed by the implementation of a computer inservice. The program was aimed at eighteen teachers in a junior high school who reported that they did not feel comfortable using computers or did not know how to use computers effectively. The program consisted of twelve, one hour sessions which gave teachers hands-on practice and introduced them to the computer hardware and software. The success of the inservice was measured by class assignments, a survey, and a post-test. At the end of the twelve week program, 84 percent of the inservice members reported feeling more comfortable using computers in the classroom. It was concluded that hands on computer inservice workshops can help teachers become familiar with new technologies. Appendices include a teacher survey, an inservice survey, and a computer literacy test.

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CHAPTER I

Purpose

The junior high school used in this writer's practicum consisted of approximately 1600 students and one hundred teachers, and was located in a very large county. Class size ranged from ten to thirty-five students. Four years ago a new wing of science and math rooms were added to this school. When this addition was complete, the school was given money to purchase equipment for this new addition. Every math and science room in this new building became equipped with an Apple IIe computer and printer. A computer lab which houses an additional thirty Apple IIe computers was established in this new building.

In the past four years other teachers, guidance counselors and administrators have had opportunities to purchase computers. About seventy-five percent of the junior high school's faculty now have a personal computer in their classroom. There has also been money available for each department and the library to purchase software to use with these computers. The county also has a license with a company called

Minnesota Educational Computing Corporation. This company allows the duplication of instructional software.

The writer is the sole computer instructor for the students at the junior high school. Some of the staff members come to the writer's room for help using their computers; however, many teachers do not use their computers. The writer teaches six computer literacy classes to seventh graders within this school. The lab the writer teaches in has thirty Apple IIe computers which are used by the students. Teachers are welcome to use the computers before school, after school or during their planning period. This writer has helped several teachers in the school with many computer problems ranging from adjusting the vertical control on the monitor to explaining AppleWorks, an integrated management program.

Computers are becoming a major tool for teachers as technology continues to permeate the educational system. The ability to feel comfortable using computers and the ability to know how to use computers effectively is becoming a major concern among educators.

Computers can eliminate lengthy administrative tasks, and help motivate students by effectively reinforcing classroom lessons. However, the Office Technology Association report suggests that a large majority of teachers today have had little or no training in the use of new technology. (Scrogan, 1989) The teachers at the target school were given the computers with no software or training about using the computers.

The teachers did not know how to use the new technology effectively. Because of the lack of training and instruction, many teacher's computers sat on a desk with a dust cover over them. As the writer walked by teacher's rooms or talked to teachers about using their computers, many teachers stated they did not have programs to use or they simply did not know what to use the computer for. The school district had spent many dollars to furnish the teachers in this school with computers, but the district neglected to give these teachers training so they could feel comfortable using the computers.

A survey was conducted (Appendix A:33) to find out how comfortable teachers at this school felt using the

computer, and if they were aware of the many programs that can help them effectively use their computers. The survey results (Appendix B:34) demonstrate a discrepancy between the technological resources available to teachers and the teacher's ability to effectively use these technologies. Out of 47 teachers surveyed, only 12 felt comfortable using computers, and only 12 teachers had been previously informed about the computer and what programs are available to help them in their educational setting.

Teachers in the target school had access to computers, but would not use the computers because they felt uncomfortable or they did not know how to use the computers effectively. The following objectives were addressed in this practicum:

After twelve weeks, eighty percent of the teachers participating in the program will use their classroom computers at least twice a week for instructional tasks. This will be measured by a final survey given to all participants of the inservice.

After twelve weeks, ninety percent of the teachers will be able to brainstorm at least five ways they could integrate instructional software into their daily

curriculum. This will be measured by an assignment given to all participants of the inservice. The list will then be compiled and distributed to each participant.

After twelve weeks, the teachers will be able to record grades for a class of students on the computer with eighty percent accuracy. This will be measured by an assignment given in class to each participant.

After twelve weeks, the teachers will be able to compose a short letter to parents with a word processor with eighty percent accuracy. This will be measured by an assignment given in class to each participant.

After twelve weeks, the teachers will be able to enter a list of students and relevant information into a database with eighty percent accuracy. This will be measured by an assignment given in class.

After twelve weeks the teachers will be able to achieve 80 percent or higher on a computer literacy test. (Appendix F:39) This test will cover all major ideas and programs covered in the inservice.

CHAPTER II

Research and Solution Strategy

Recently computers have become a common tool used in the educational process, but few teachers are effectively using computers to make some of their instructional tasks easier. As with all media, computers are tools for the delivery of instruction. They need to be used by teachers and students effectively in order to understand the full potential of this innovation.

Many different techniques have been used to introduce teachers to computers. If teachers are going to use computers, they should be able to use them with ease and without fear. Therefore, if a district is going to use computers, if should invest in teacher training. Not only one inservice but several inservices should be offered to help teachers fully develop their capabilities (Parker, 1985). Also, with changes in computer technology, computer inservices covering several years are needed. All teachers need "awareness" level training, and many teachers need to

go a step further to develop "operational" level skills usually in the form of hands-on experiences. A few teachers will need advanced training in areas related to their teaching expertise (Parker, 1985).

Currently many students are computer proficient and today's teachers are having a difficult time staying ahead of them. This situation makes teachers feel uncomfortable using computers in the classroom. If teachers are trained and well informed about the computer and available programs, tension can be eliminated. Tauber (1985) has developed a six-hour workshop for all teachers which can achieve four objectives. The first objective is to provide general knowledge of the possible functions of computers as useful word processing, administrative/clerical, and drill/practice tools. The second objective is to develop specific skills in the operation of microcomputers and software. The third objective is to foster a positive attitude toward microcomputers, and the fourth objective is to explore specific ways that educators' knowledge, skills and attitudes can positively influence today's students.

University level training tended to focus

primarily on programming concepts and the history of computers. Morton Schneiderman, director of the Educational Testing Service (ETS) states, "many professors are placing undue emphasis on teaching students to write computer programs." (Tauber, 1989:10) When a teacher is teaching an English course, what good is computer programming going to do? Instead, teachers need to learn how to use the software, not how to create it. Teachers already have software available to them that can help them with instructional related tasks. They do not need to write their own software.

Most colleges and universities are in the process of preservicing future teachers. Teachers need to have instruction on how to use the computers as well as the software. One way to help teachers use the computers and software effectively is to preservice teachers.

Scrogran (1989) stated that The Office of Technology Assessment (OTA) showed 18 states requiring preservice technology training, eight states recommending preservice technology training and 25 states have no requirements for preservice technology training. Out of the universities and colleges preservicing teachers, most require their students to

take courses in computer literacy or to demonstrate computer mastery as part of their teacher preparation programs (Diem, 1989). By requiring students to take these courses, it was hoped that "new teachers would, hopefully, make better use of existing technology and be better able to apply and adapt new technologies to classroom use as they appeared." (Diem, 1989:34)

In Diem's study, two important issues were analyzed. One issue was to "determine if student teachers used computers as part of their pedagogical framework during their student teaching experience." The second issue of importance was "did cooperating teachers use computer technology themselves or encourage student teachers to use computer technology during the student teaching experience?" (Diem, 1989:34)

The student teachers were placed with cooperating teachers and these issues were examined over a two year period. Many significant results were reported. Teachers in this study did not use computers as an integral part of their instructional patterns and did not encourage or direct student teachers to do so. Secondly, the use of computers by student teachers was

for drill and practice and remedial work, and finally while students may gain technological knowledge about computers, methods instructors do not spend adequate time demonstrating technological applications. (Diem, 1989)

From these results it seems that new teachers are conforming to the ideas and patterns of their cooperating teacher, and if their cooperating teacher does not emphasize use of the computer then student teachers tend to use them. The practicing teachers in this study "doubted the usefulness and effectiveness of computer technology in their teaching field and gently guided their student teachers away from the machines." (Diem, 1989:35)

If cooperating teachers are not using computers, this could lead to the lack of use by student teaches which causes a problem in school systems. Most student teachers are placed with "veteran" teachers who have never had computer instruction or have not recently had computer instruction. Student teachers should have the opportunity to intern with a teacher who can model the use of microcomputers in the classroom (Criswell, 1989).

If all teachers can be kept well informed with inservices or workshops then these teachers can encourage student teachers to use computers with students and for administrative tasks. But the problem lies with today's teachers. According to the Office of Research and Development at the United States Department of Education, 89 percent of all schools of education offer some form of computer training to their students; however only about one-third of all present K-12 teachers have had even ten hours of computer training. (Scrogan, 1989) Teachers need to have inservices, workshops, or courses offered to them to keep them on track with computer technology. It is important to have current teachers trained so they can aid in the training of student teachers.

Criswell (1989:42), suggests "training needs to be provided for cooperating teachers so that clinical experiences include the actual use of microcomputers." Several types of inservices and workshops have been used to train teachers in becoming familiar with the computer and computer software.

Bitter and Yohe (1989) recommend that teachers have plenty of hands-on experiences in learning how to

use the computer for classroom management, and secondly that teachers must have an understanding of the various methods of integrating software into the curriculum. Bitter and Yohe (1989:25) also suggested that, "teachers must have incentive to discover and refine their technological skills through staff development activities." The OTA report identifies many ways to increase teacher use of computer in the school. Allow more hands-on training for teachers, use credible instructors; teachers or individuals with close ties to the classroom, increase access time, build a "tool" focus; make teachers aware of the fact a computer is a tool for productivity and investigate educator purchase programs. "Sufficient evidence is appearing to indicate that teachers who have computers at home have an easier time integrating computers within their teaching." Scrogan (1989:81) Factors were also listed to help contribute to an effective inservice. The first factor was to keep an appropriate balance between lecture and guided practice. The second factor was to use detailed curriculum guides and lesson plans. The third factor was to have clear and relevant objectives. The fourth factor was to present lesson-related

materials and handouts, and the final factor was to have inservice lessons linked to instruction. Dalton (1989:23) stated:

> Although we may believe teachers will automatically seek to learn about new technology, the reality is that, when they are lacing confidence to integrate innovation into their instructional program they will tend to ignore it.

Public Schools in Ohio used the following plan to spark interest in teachers for using computers in the classroom. They used a high school, middle school and elementary school as pilot schools for this plan. Within these schools a lab with 10 computers was established. The purpose of this program was for teachers to gain experience with the microcomputer in teaching and learning. A workshop series was established for teachers and administrators of the three schools. After the workshops, request began coming from teachers and administrators of the Columbus District's other schools. The school district ran four workshops of 20 teachers each. Within five working days they had received 600 sign-ups from teachers and administrators. (Merriman, 1989:176) stated, "it is still evident that the technology is in a state of constant change." Therefore, the need exist for

inservice workshops to be continued within a school system. Also new software requires review and use before being used in the classroom. As long as technology keeps moving forward and new teachers are hired, the need will exist to continue training teachers.

One school's training plan was summarized in an article by (Stafford, 1989). Teachers were introduced to the computers gradually by using software and completing activities. The first session presented by Tandy/Radio Shack was a review of formatting and copying disks. The teachers were also instructed to use DeskMate, which is an integrated program involving a word processor, a data base and a spreadsheet. Using this program the teachers had to develop simple lesson plans, a class roster and a gradebook. All of the teachers worked at their own pace. Because teachers were given the chance to work at their own pace and use hands-on activities, they have become comfortable with the computers (Stafford, 1989). The author also noted that there must be continued training for these teachers if the computers are to be used effectively in the classroom.

Trained and informed teachers who feel comfortable using a computer can also encourage their students to use computers. Tauber (1989) suggests that following outline for a workshop to be given to teachers to help them effectively use their computers. The first twenty minutes was a course orientation followed by 30 minutes of history and operation of microcomputers. Then the microcomputer was used as a word processing tool for 120 minutes. After this session the microcomputer was used as an administrative tool for 80 minutes. Forty minutes was set aside for the microcomputer to be used as a drill/practice tool, and the last 40 minutes of the inservice was set aside to discuss the impact of microcomputers. He also suggests that trained and informed teachers will help positively influence students to use the computer.

A different strategy for an inservice training was given by Parker (1989). His goal was to make sure the technology helps the curriculum. In his plan he suggests looking at these three ideas: 1) focus on existing curriculum goals, 2) identify objectives that students have trouble mastering and 3) develop an inservice for teachers to help eliminate trouble spots

identified in step two. In the training session the teachers should create project ideas. Then in the first part of each session, the teacher is given "lab time" in which they will work with the instructor on individual projects. The second part of each session should be used for group seminars. These seminars should focus on issues related to educational use of computers. It was suggested that administrators and computer experts from area school systems be used to describe their ideas and strategies. In this inservice teachers were given the opportunity to suggest what they wanted to learn, this inservice has been a success; the teachers have not only come up with their own ideas.

After reading the literature and speaking to the computer coordinator of the school system, this writer decided that a computer inservice for teachers at the junior high school would be most effective. Many of these teachers felt uncomfortable using computers and they had little opportunity to gain useful hands-on experience when using the computer. The teachers would be given a 12 week inservice covering many topics involving hands-on practice on the computer.

One of the topics to be covered would be AppleWorks, an integrated program with a spreadsheet, a data base and a word processor. Minnesota Educational Computing Corporation (MECC) software including Grade Manager, a gradebook program, and several of MECC's educational programs involving math, science, English and social studies would also be covered. The teachers will also be given some basics such as formatting a disk and copying a disk. Also, other software would be introduced which could help teachers with a variety of tasks: Print Shop, Crossword Magic, Label Maker, Newsroom, and Print Shop Companion.

The implementation of such training would involve a 12 week computer inservice for any teacher who is willing to participate. Eighteen teachers signed up for the computer inservice and the participants would receive ten inservice points for attending.

CHAPTER III

Method

Since teachers were presented Apple computers with little or no training, the goal of this writer is to give teachers the training they need in order to feel comfortable using the computer and to use the computer as a tool to help with instructional and administrative tasks.

During week one the survey results listed in (Appendix B:34) were discussed with the participants. Also topics to be covered during this inservice were discussed.

During week two a program created by Minnesota Educational Computing Corporation (MECC) was introduced. The session started with formatting a blank disk to be used to hold each participants data. Each participant was given the program Grade Manager (MECC, 1985) and a blank disk. After formatting the disk, the participants selected the menu item called setup. The participants were instructed on how to create a password for their program. Each participant

was told to bring their gradebook to the inservice. The participants who did not have a gradebook were given a fictitious list. Each participant entered student names and student numbers from one class of their choice. After the participants were finished entering names and student numbers, instruction was given concerning the selection of categories. After assigning categories for the class the grades were entered. Each participant was instructed to finish entering grades on their own computers in the classroom.

During week three, the participants started up the program named Grade Manager (MECC, 1985) using the password they created at the last inservice. Each participant had all student names, student numbers and student grades entered for one class. The inservice began by the instructor teaching the students how to assign weights to the grades they had entered. This was followed by instruction on how to calculate and print the grades. Each participant was required to have a printout of their grades for next week to be turned into the instructor. In the remainder of time left, the participants were introduced to AppleWorks

(Lissner, 1984), and once again they formatted a disk. After formatting, instruction was given on the different menus of AppleWorks. (Lissner, 1984) The participants started by picking the word processor option from the menu. Several commands which aided in the use of the word processor were explained along with the printer option menu. A handout was presented to each participant. After instruction, the participants typed a short paragraph with mistakes. Then they had to go back to the same paragraph and begin correcting the mistakes using the commands introduced.

During week four, the participants had the choice of creating a lesson plan or a letter to a parent using the word processor. This was turned in to the instructor at the end of the session.

During week five, the participants chose the database option from the menu. An introduction about the database was given and several commands and options were discussed. The commands were given to them in a handout during week three. After discussing the commands and options, the participants were given an explanation about creating categories for the database. The participants brainstormed several categories on a

piece of paper. The option of what to include in the databases was open to the participants. Then the participants were given instruction about entering categories. All participants started entering their categories which they had created from the brainstorming session. The participants were told to bring a list of items next week that pertain to the categories they created for their database.

During week six, the participants entered their information into the database they had created. After all participants finished, printing from a database was explained. They also practiced inserting and deleting a record from their database.

Week seven began with an introduction to spreadsheets. Various ways of using a spreadsheet were discussed. Several commands were discussed to help the participants when using the spreadsheet. The participants had several terms explained to them. Terms included cells, rows, columns, formulas, values, and labels. The participants entered names and grades of ten students. Then they created a formula to total the rows and average the rows.

Week eight began with an introduction to changing

standard values and copying cells. After the explanation, a handout was given which helped the participants learn how to copy a cell. Then when they had finished copying a cell they were instructed to copy another cell without help from the instructor or the assistant. After completing this assignment, the participants were given an introduction to the company called MECC (Minnesota Educational Computing Corporation). They learned about the counties policy on acquiring programs available through MECC. They also learned about user documentation for all MECC programs. Several MECC programs involving the subjects of math, science, social studies, and English were distributed to the participants. The participants were told to look at the programs and brainstorm some ways they could integrate these programs into their classroom.

During week nine and ten, the participants continued using the MECC programs and brainstorming ways of integrating these programs into their classroom. At the end of the session their papers were collected. The writer prepared a compiled list of their ideas and presented all ideas to the participants

in the form of a handout. (Appendix E:37) The participants were also introduced to many other programs from different companies. These programs included: Printshop, Printshop Companion, Crossword Magic, Newsroom, Certificate Maker and Labels, Labels, Labels. The participants were shown one example of what each program could create. The participants were then given an open lab situation where they would work in groups of four and create something from each program.

During week eleven a guest speaker from Southern Photo and News (SPAN) spoke to the participants about the new computers and technology. Handouts were distributed containing educator's prices for computers and available software. At the end of the session a short review was conducted for the post-test.

During week twelve, a test over all topics and objectives was given. (Appendix F:39). A survey was also given about the effectiveness of the inservice, (Appendix C:35) and all papers for inservice points were distributed and completed.

The writer coordinated the inservice, taught parts of the inservice, and helped teachers with their hands-

on activities. There was no funding available for an instructor to teach AppleWorks to the teachers as recommended by the computer coordinator. The writer was forced to teach AppleWorks to the participants with the aid of another computer teacher. This teacher acted as a lab assistant and helped other teachers with their hands-on activities. The writer arranged to have a speaker from SPAN update teachers on new technology available. The writer also provided current hand-outs, catalogs and software to the participants. All assignments and the post-test were created and graded by the writer.

The writer made arrangements with the mentor to keep the computer lab open after school so participants could use the lab. All MECC programs were made available by the instructional materials lab at the county office. AppleWorks was brought by the participants or furnished by the instructional materials lab. All other programs were purchased by the school through funds over the years. The computer lab used was the lab in which the writer taught in. This lab consisted of 30 Apple IIe computers with two printers. Some participants could not attend all the

sessions, so the instructor made special arrangements with those participants for makeup sessions.

CHAPTER IV

Results

The first objective was that 80 percent of the teachers after the twelve week inservice, would use computers in the classroom at least twice a week. This was measured by a survey (Appendix C:35) and was also verified by the writer's observations. Eighty-three percent of the teachers reported that they used their computers in the classroom at least twice a week. (Appendix D:36) This objective was met.

Another objective addressed the teachers critical thinking skills. Ninety percent of the teachers were expected to brainstorm at least five ways to integrate computer software into their daily curriculum. One hundred percent of the inserviced particpants completed this activity. A list was compiled and distributed to each participant so they would share ideas on how to use computer programs in their classroom. (Appendix E:37)

Three other objectives involved actual use of the computer during inservice training. Teachers were challenged to print out a lesson plan using the word

processing program, maintain grades for the nine week grading period using the spreadsheet program, and produce a class roster using the database progam. The teachers were expected to score at least 80 percent accuracy on all three of these assignments. Five participants scored 100 percent, four participants scored 95 percent, six participants scored 90 percent, three participants scored 85 percent on the word processing assignment. Ten participants scored 100 percent, six participants scored 95 percent, and two participants scored 90 percent on the spreadsheet assignment. Eighteen participants scored 100 percent on the database assignment. The objective was met.

At the end of the inservice all participants were given a computer literacy test which they were to achieve a score of 80 percent or higher. Fifteen participants scored 100 percent, two scored 97 percent, and 1 scored 94 percent. This objective was met.

CHAPTER V

Recommendations

Computers and technology are changing everyday, therefore teachers must continue to have inservices to be introduced to new technologies and software that can help them with instructional and administrative tasks.

The writer suggests more offerings of the same inservice so all teachers have a chance for hands-on practice. Also, more advanced type inservices should be given to teachers who have had the introductory inservice. Universities need to offer basic and advanced computer courses to teachers so they can continue learning about using computers.

Some teachers need to be given incentives such as time off to attend workshops or extra pay for attending a computer inservice. This is a matter of what monies are available within counties to allow teachers these benefits. All counties should offer computer inservices to teachers so they can keep up-to-date and ahead of their students so they feel comfortable using computers in the classroom. This project can be easily adapted to any school system and any type of computer.

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Appendix A

TEACHER COMPUTER SURVEY

Using the following scale of 1 to 5, answer the following questions.

1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Very Often

1. How often do you use a computer at school? 1 2 3 4 5

2. Do you use the computer to help with everyday tasks? (examples: grades, lesson plans, labels) 1 2 3 4 5

3. Do you have students use the computer to reinforce or supplement a lesson? 1 2 3 4 5

4. Do you feel comfortable when using a computer? 1 2 3 4 5

5. Have you been informed about software that can help with classroom management? 1 2 3 4 5

6. Have you had instruction or an inservice to help you use a computer? 1 2 3 4 5

7. Do you use the computer for rewards for your students? 1 2 3 4 5

8. Do you use the MECC programs that are available to all schools in your county? 1 2 3 4 5

9. Do you ever use AppleWorks, an integrated applications program involving a spreadsheet, a database, and a word processing program? 1 2 3 4 5

10. How often do you have a problem when working with a program? 1 2 3 4 5

Appendix B

Results of the Survey

Question	Never	Seldom	Sometimes	Often	Very Often
1	15	5	10	6	11
2	25	5	3	4	10
3	15	6	6	5	13
4	7	8	14	6	12
5	13	8	11	6	6
6	17	5	10	3	12
7	14	5	8	6	10
8	25	3	6	3	9
9	26	2	4	3	10
10	6	14	10	6	4

In addition to the survey the teachers were asked if they would like to have an inservice about computers.

Out of 47 surveyed 34 teachers would like to have an inservice, nine would not, and four gave no response.

In the statistics listed above some teachers gave no response to some questions.

Appendix C

Inservice Survey

Using the following scale of 1 to 5, answer the following questions.

1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Very Often

1. Was the information and programs learned in this inservice useful to you? 1 2 3 4 5

2. Did this inservice help you make better use of your computer? 1 2 3 4 5

3. How often do you use your computer or some other computer within the school? 1 2 3 4 5

4. Do you feel comfortable using a computer? 1 2 3 4 5

5. Will you use AppleWorks to help with classroom management? 1 2 3 4 5

6. Was Grade Manager a program you could use in the future? 1 2 3 4 5

7. Can you use a computer more effectively for management and classroom uses? 1 2 3 4 5

8. Do you feel you could use some of the MECC programs within your classroom? 1 2 3 4 5

9. Would you like to continue learning more about the types of programs available to use with your computer? 1 2 3 4 5

10. Add any additional comments about this inservice below.

Appendix D

Results of the Final Survey

Question	Never	Seldom	Sometimes	Often	Very Often
1	0	0	2	2	14
2	1	0	1	5	11
3	1	2	3	5	7
4	0	0	6	5	7
5	1	0	2	5	10
6	0	2	2	6	8
7	0	0	3	5	10
8	1	0	0	5	12
9	0	0	3	3	12

Question ten ask for additional comments. All the comments received were very positive. Many participants felt the inservice was informative, useful, and saved them hours of time learning new information. Many participants stated they would like to have a follow up workshop that would expanded on what they learned in this inservice.

Appendix E

Brainstorming Activity
Ways to use MECC Programs in the Classroom

ESTIMATION
1. Introduction to a lesson using an overhead display or the computer connected to the television
2. Reinforcement of estimation problems
3. Reinforce greater than and less than.

FRACTION MUNCHERS
1. Reinforce numerators and denominators
2. Reward after assignments are complete
3. Reward after an excellent score on a test
4. Reinforce fractions in general
5. Practice on fractions

QUOTIENT QUEST
1. Reinforce division concepts in a CE class
2. Reward for completing assignments
3. Practice division problems

DECIMAL CONCEPTS
1. Good practice for word problems with decimals
2. Introduction of a lesson about decimals

SPELLEVATOR
1. Good practice with all levels to review spelling words for weekly tests.
2. Practice vocabulary words

MECC WRITER
1. Can be used in English or reading for writing paragraphs.
2. Writing stories
3. Creative writing

INVISIBLE BUGS
1. Genetics only for a challenge to high powered students
2. Reward for students who are intelligent

LUNAR GREENHOUSE
1. Plant production in agriculture classes
2. Science class studying plants and their needs

3. Individual study for students
4. Overhead display for the entire class

ODELL LAKE
1. Introduce the food chain in science
2. Learn about aquatic life
3. Incentive for students who have finished their work
4, Reinforce food chains, predator-prey and ecology

OREGON TRAIL
1. Reinforce a lesson
2. Use for a discussion (reason for leaving home for the west)
3. Question and answer
4. Critical thinking
5. Cooperative learning within a gifted class

JENNY'S JOURNEY
1. To help students learn direction
2. Introduce or reinforce map skills
3. Critical thinking
4. Cooperative learning

Appendix F

Computer Literacy Test

TRUE OR FALSE
Indicate your choice by circling T for a true statement or F for a false statement.

T or F 1. Schools can use a spreadsheet to keep student grades.

T or F 2. A spreadsheet is an electronic worksheet that contains rows and columns.

T or F 3. A cell consist of two rows.

T or F 4. You could type a letter to a parent using the word processor.

T or F 5. To display help information for OPEN-APPLE commands, press OPEN-APPLE ? (question mark).

T or F 6. AppleWorks has three components, the spreadsheet, the database and the Grade Manager.

T or F 7. OPEN-APPLE C saves information to your disk.

T or F 8. When using the Grade Manager program, you can have weighted grades.

T or F 9. In class we have been using a hard drive.

T or F 10. Heat will not damage a disk.

T or F 11. When you are finished using a disk it should be placed in the protective sleeve.

T or F 12. You should use a ballpoint pen when writing on the disk's label.

T or F 13. Warm boot means to turn the computer off.

T or F 14. You need a backup copy in case the original disk is damaged or destroyed.

T or F 15. A menu is a list of choices.

T or F 16. A floppy disk cannot be damaged.

T or F 17. The programs available from MECC are not educational.

MULTIPLE CHOICE

Pick the best answer. Place the letter on the blank line provided.

_____ 18. When using the AppleWorks spreadsheet, you must start a label format with a
A. Quotation mark (")
B. Addition symbol (+)
C. Subtraction symbol (-)
D. The letter L

_____19. When using the AppleWorks spreadsheet, you must start a value format with a
A. Quotation mark (")
B. Addition symbol (+)
C. Subtraction symbol (-)
D. The letter V

_____20. The best way to erase a cell is by pressing
A. OPEN-APPLE P
B. OPEN-APPLE B
C. RETURN
D. OPEN-APPLE ?

_____21. @SUM(B6...D6) is a function to get
A. an average of cells B6 through D6
B. a sum of your whole spreadsheet
C. an estimate of B6 through D6
D. a total of cells B6 through D6

_____22. @AVG function means
A. total columns A, G and V
B. Average
C. A divided by G
D. Erase the cell

_____23. When using AppleWorks, how do you save the information from the computer's memory to your disk?
A. OPEN-APPLE C
B. OPEN-APPLE M
C. OPEN-APPLE D
D. OPEN-APPLE S

_____24. When using AppleWorks database, OPEN-APPLE A will
A. add all the records together
B. arrange the information alphabetically or numerically
C. print all the data
D. erase all the data

_____25. An example of a score category would be
A. tests
B. name
C. date
D. student I.D.

_____26. When using the word processing printer options, CI stands for
A. characters per inch
B. computer index
C. computer information
D. calculate integers

_____27. A formatted disk used to store information is called
A. a program
B. a tape
C. a data disk
D. a hard disk

_____28. Using the Grade Manager program, you can record a score as a zero or as missing. How do you record the score as missing?
A. press ZERO
B. press M
C. press ENTER
D. press B

_____29. Using the Grade Manager program, what do the asterisks (***) mean when shown in place of a student score?
A. missing score
B. lowest score
C. highest score
D. zero

_____30. The proper procedure for a COLD BOOT is
A. Turn on the keyboard, put the disk in the disk drive, turn on the monitor
B. Turn on the monitor and the keyboard
C. Put the disk in the disk drive, turn on the monitor, turn on the keyboard.

_____31. To WARM BOOT press
A. DELETE, RESET, ?
B. OPEN-APPLE, CONTROL, RESET
C. SHIFT, CONTROL, B

_____32. You must _____ a disk before using it.
A. copy
B. sell
C. backup
D. format

_____33. What does CONTROL L do when using the word processor?
A. underline
B. label
C. superscript
D. boldface

_____34. MECC stands for
A. Many Educational Computing Corporations
B. Maine Educational Council of Computers
C. Michigan Educators Command Company
D. Minnesota Educational Computing Corporation

_____35. Where can you find a listing of all MECC programs that are available through the county.
A. media center
B. guidance office
C. teachers lounge
D. main office